Conservation of Life

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"It is perhaps no exaggeration to say that in no other period of history has the prevention of disease occupied so large a place in the thoughts of every intelligent community as obtains at this present day. Organizations of intelligent men and women exist in all of the large centres of population whose sole aim and purpose is the conservation of the public health. Their time and means are freely given to the end that their fellows, of every class and condition, may not only be nursed back to health when they fall ill, but that their well-being may also be preserved by a healthful environment, and pure and wholesome food, in order to limit disease they may contract, avoid unnecessary ailments, and prolong their lives to their families and society.

No man is or can be "a law unto himself," but is, in a large sense, his brother's keeper. Individualism must be submerged in order that every human unit in every place have a community of interest with every other."

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Conservation of Life

Vol. I. OTTAWA, OCTOBER, 1914 No. 2

TOWN PLANNING ADVISER TO THE COMMISSION OF CONSERVATION

THE work of "Town Planning" has progressed rapidly in Canada. Several of the Provinces have adopted legislation which makes it possible for municipalities to do something, while from one end of the Dominion to the other there is ample evidence to show that the people are alive to the fact that our towns and cities can and should be planned upon better lines.

At the International Town Planning Conference held in Toronto in May last, the Canadian delegates met and passed the following resolution:

"That this representative gathering of Canadian delegates at the International City Planning Congress held in the Convocation Hall of Toronto University on Wednesday, May 27th, 1914, desires strongly to pray the Commission of Conservation, in view of the very practical co-operation and interest in the aims and objects of the present International City Planning Conference happily promoted by it, to further continue its good work by the creation of a special *Bureau of City Planning and Housing* in connection with the activities of the Commission of Conservation to act as a *Central Body* to encourage and co-operate with provincial or other housing and town planning bodies."

This wide-spread interest and the wish of the people to do something has created the demand for someone to guide and wisely direct action in this scientific work.

It has been felt that the work is surrounded with difficulties and calls for a leader who is more than a mere landscape architect or one who can plan a city beautiful—one who, while possessing the faculty to grasp the æsthetic, can direct the work of town planning upon practical lines, meeting the many difficult and intricate problems which surround the question in such a manner as to bring the whole of the work within the range of practical and economic municipal possibilities.

In the belief that the subject is one truly within the sphere of national conservation, the Commission of Conservation has secured the services of one who is considered as the highest authority upon the subject, perhaps in the world. Mr. Thomas Adams is peculiarly fitted for the important position of Adviser to the Commission in all matters connected with town planning and housing, for he brings to his duties great knowledge and depth of sympathy and a width of outlook, coupled with a wealth of experience in all these matters which eminently fit him for a task of such enormous magnitude.

For the past four and a half years Mr. Adams has filled the position of town planning expert of the Local Government Board of Great Britain,

||Adams, Thomas ✓
||City planning — National bureaus.

where he has been responsible for all the preliminary work under the Act of 1909, and the Commission of Conservation has been most fortunate in securing his services for a period of at least three years.

That his qualifications are of the highest is apparent, for his works speak for themselves. Educated at Edinburgh, he became a Fellow of the Surveyors Institute (by examination). He is President of the Town Planning Institute of Great Britain. He is an Examiner in Civic Design to the University of Liverpool and Honourary Fellow of the Garden Cities and Town Planning Association.

At different times he was secretary and manager of the first garden city at Letchworth, in which capacity he was responsible for the executive work of the foundation of Letchworth upon which work he has left an indelible impression of his abilities. In his practice as a town planning surveyor, he has acted as consultant to the Marquis of Salisbury, the Earl of Lytton and others of the large land owners of England. He prepared the plans for Knebworth, Alkrington Newton Moor, Shirehampton and Glyn Gory, and a number of other garden suburbs and villages.

During the period of service with the Local Government Board he has held inquiries into about eighty proposed town planning schemes in England and conducted all inquiries into such schemes as have been compiled and approved to date.

One of his most important pieces of work has been the organization of the Arterial Roads Conferences of Greater London, to which he was specially appointed to represent the Local Government Board in 1913. Upon Mr. Adams has fallen the responsibility of organization, a task of itself of no mean magnitude when it is remembered that 113 local authorities are represented in the conferences and all of them are working harmoniously together, with the object of securing the "town planning" of the world-great metropolis.

It can, therefore, be safely said that the Commission has secured for the people of Canada the best expert that can be found upon the subjects of town planning and housing, and his services are to be used by the Commission for the improvement of all Canadian towns and cities, the people of which indicate an earnest desire to extend and build upon the most modern and economical lines.

HOME TEST FOR DIRT IN MILK

The following is a simple home test for dirty milk which it might be well for the housewives of Canada to apply. A perfectly clean funnel is used with a small piece of clean wire netting fitted in the neck opening and a thin layer of clean cotton batting on the wire netting. The funnel is stood in a large jar and a quart or more of the milk filtered through the cotton. The cotton is then removed and placed on clean white card to dry. If there is evidence of dirt upon it the attention of the milkman may be called to this direct evidence of careless handling and if trouble persists the local health authorities may well be notified.

THE HEATING OF OUR HOUSES

NO one will question for a moment the bad effects on health of improper ventilation. We emphasize the beneficial effects of open-air treatment of tuberculosis and pneumonia, forgetting that the same fresh air treatment, if as rigidly carried out, would prevent a large proportion of cases of both of these diseases.

In the heating of our homes, the three cardinal points are: proper temperature; proper humidity or moisture; and a current of air—in short, the securing of proper climatic conditions.

The normal out-door air contains from 65 per cent to 75 per cent of moisture. Pass this through a hot-air furnace, and by the time it reaches our living or sleeping rooms it will not contain more than 40 to 50 per cent of moisture. The same is true in houses heated by hot water where no provision is made for supplying moisture. The result is that this dried-out air craves moisture, and will take it up from all surrounding bodies—from our skin, the mucous membrane of our mouths, noses and throats; and is in a large measure responsible for the dry, hacking laryngeal coughs so prevalent in winter. Furthermore, from an economic standpoint, this method of heating without moisture is very extravagant, for very dry air requires a higher temperature to produce the same sensation of warmth and comfort than does an atmosphere with proper percentage of moisture.

To overcome this dryness, small reservoirs for heating water have been attached to the furnaces; but these are rarely kept full, and even when they are, they are not at all adequate; for instance, air at 25 degrees Fahrenheit (7 degrees of frost), even if saturated with moisture, if heated to 70 degrees, would require the addition of a half pint of water to every 1,000 cubic feet to give it a humidity or moisture of 65 per cent, which is practically normal.

Some conception of the amount of moisture required, and how far the air in our homes, schools and factories falls short of it, can be had from the following description of the precautions taken by the American Bell Telephone Company in their chief building in Boston, which has a capacity of 450,000 cubic feet and a day population of 450 persons.

The fresh air, which is distributed by a mechanical system, is drawn into the building at the rate of 26,000 cubic feet per minute, and has moisture added so as to contain about 50 per cent of relative humidity. To secure this condition, 675 gallons of water, in the form of steam, are mixed with the air, in ten hours, or about one and one-half barrels per hour. Certain parts of the building which had been heated with difficulty before are now made more comfortable; and in the whole building three degrees less heat is required to maintain a comfortable temperature. There has been a noticeable absence of coughs during the winter among the employees.

Various humidifiers have been suggested, of which a very efficient and simple one is the exposing of the air from a register or radiator to moisture, by having it pass through a surface of cotton wick—one end of which is submerged in a reservoir or vessel, containing water, and which it attached to the radiator. It has been demonstrated that by means of this contrivance the relative humidity of a room can be kept between 55 and 60 degrees Fahrenheit by evaporating about four and a half quarts per day; and a temperature of 65 degrees so maintained is as comfortable as one of 70 in a dry atmosphere.

A practical illustration of this is the fact that we can sit and read in comfort on our verandahs in a temperature of from 60 to 65, degrees, having a normal humidity; while the same temperature in our homes, with a dry atmosphere, would be very uncomfortable, owing to the more rapid evaporation of moisture from the surface of our bodies in the drier atmosphere.

Obviously, then, whatever the method of heating may be, it is imperative that provision be made for having the air sufficiently charged with moisture.

THE BACK-TO-THE-LAND MOVEMENT

THE back-to-the-land movement is frequently referred to as a possible remedy for the evil of urban overcrowding. By many social reformers the exodus from the country towards the city is greatly deplored and many earnest workers are putting forth brave efforts to combat the tide and induce the current to flow in the reverse direction.

During the decade 1901-1911 Canada's urban population increased by 62 per cent and the rural population by only 17 per cent. In the Maritime Provinces and in Ontario the rural population actually decreased. In 1901 the people living in towns and cities formed 38 per cent of the total population; in 1911 this proportion had been increased to 45 per cent. In the United States it is 46 per cent and, therefore, the ratio of urban to rural popultation is now about the same in Canada as in the great republic. This cityward movement, as disclosed by the last census, undoubtedly furnishes food for serious thought and, in some quarters, is regarded as very disquieting.

The advocates of the back-to-the-land movement lay great stress on the congestion, poverty, unemployment and squalor of life in the city slums, and are fond of contrasting this with the comfortable home life, demand for labour, and delightful surroundings to be found in the country. While thousands in the city are crying for work, farmers are complaining of the scarcity of help. Moreover, we are increasing the number of consumers of food products far faster than the number of producers and this is blamed as one cause of the high cost of living. Also, rural conditions are usually more healthful than city environment and, from the point of view of race conservation, the depletion of the rural districts is to be deplored.

Theoretically, the foregoing argument seems unassailable, but the enthusiasts who preach to others the attractions of an Arcadian existence —and who generally have some good excuse why they themselves should not be pioneers—ignore some very important practical considerations. Primarily, the great improvements in farm machinery and the growth of agricultural education and better methods of tillage have made the farmer of to-day more efficient than his predecessor of a generation ago. In other words, it takes less labour to raise a given quantity of food than used to be the case; each farmer to-day can feed more men than his father did, and, consequently, a smaller proportion of the total population is needed to engage in agriculture. As for the scarcity of farm help, the scarcity complained of is a shortage, not of labour supply but of efficient labour. The idea that any able-bodied man will do for a farm labourer is held only by those who know nothing about farming. Skill is required in this as in other occupations. The farmer has no use for the city's inefficients or ne'er-do-wells. The cost of living cannot be reduced by overwhelming the countryside with tillers of the soil, thus either making agriculture unprofitable or giving rise to a peasant class which would be no improvement on the slum-dwellers of the town. Millett's "man with the hoe" is not the ideal we wish to set up for the dwellers in rural Canada. The cost of living, if it is to be reduced at all, will be lowered by an improvement in our costly methods of distribution, and this is an urban, rather than a rural, problem. We must make up our minds that the increase in our city population will continue and that no extensive back-to-the-land movement will counteract it. To conserve the race we must, by scientific town-planning, improve the material environment of the city-dweller, and, by physical training in our schools, secure as fine a bodily stamina for the city as for the country child.

Speaking generally, therefore, we may say that the movement of population cityward is determined by economic and social causes which it is impossible to resist, and that our policy must endeavour to regulate rather than to dam back this flow. Nevertheless, an actual decrease of rural population, in an agricultural province like Ontario, is a danger signal, and shows that the movement in Canada, during the last decade has been excessive. This was probably due to special causes, such as the rush to the West and the abandonment of lands like those in the Trent watershed, which should never have been taken up for agriculture. There are not wanting signs that the present decade will show, in this province at least, a slow returning movement, which, when the next census is taken, will exhibit a steady progress in city and in country alike.

SAFETY IN SPORT

THE advent of the shooting season calls attention to the number of accidents annually recorded as a result of carelessness by hunters. Year after year accidents of the same class occur: guns go off prematurely, or through want of care in handling; hunters in the woods are shot in mistake for deer and other animals. Another series of accidents, due to the upsetting of canoes, results in the drowning of duck-hunters or other occupants.

While the railways and other large employers are advocating and insisting upon safety measures by employees during working hours, it is of equal importance that the "Safety First" movement should have a place in the field of sport. If, by the exercise of care, lives may be saved and the number of those injured be reduced, it will well repay the greater caution required by those indulging in the favourite autumn pastime.

HOUSING AND HOMES

CANADA is rapidly becoming a country of large urban centres. The census returns for the past fifty years show conclusively that the cities and towns have developed much more rapidly than, and in many instances at the expense of, the rural districts. That the change has come rapidly is shown by the fact that in 1881 only 14 per cent of the population was found in towns and cities of 5,000 or over, while in 1911 the number had reached 45.5 per cent, in spite of the phenomenal development of agriculture in the Prairie Provinces within the last fifteen years. It will thus be seen that the difficulties arising from overcrowding in cities have increased many fold, for houses have had to be provided on short notice. To add to the complexity, a large percentage of the foreign immigrants concentrate in the cities. About one-tenth of the population of the cities of Toronto, Hamilton and Brantford, and more than one-quarter of that of Port Arthur and Fort William, are foreigners.

As a consequence, in many cities the house that was intended for one family has been converted into two, three or more family apartments. In these once healthy homes, it is not uncommon to find from twenty to thirty persons, of all ages and both sexes, living among insanitary and unhealthy surroundings—and such conditions are on the increase.

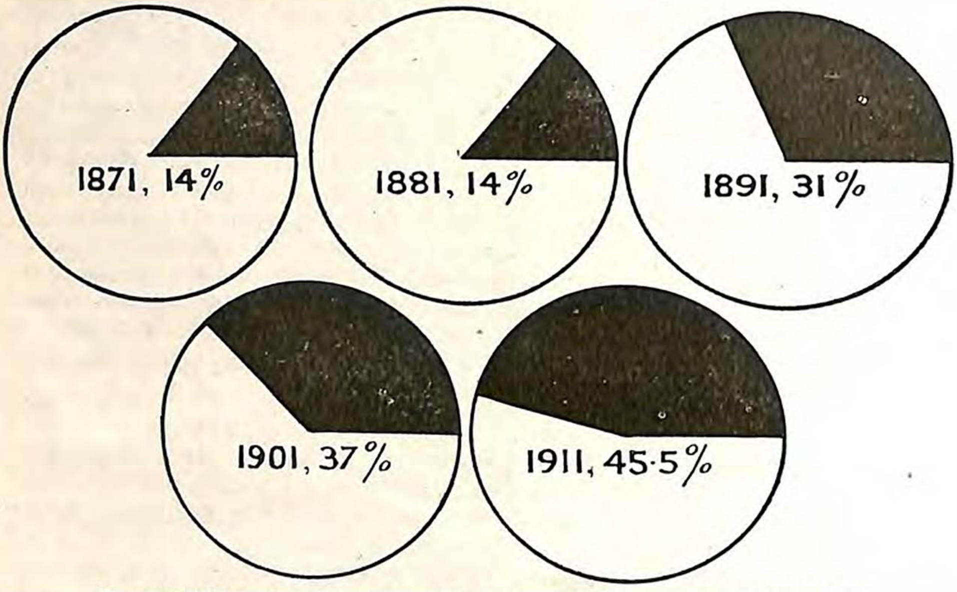

Diagram Showing Proportion of Urban Population in Canada

In the older countries overcrowding in cities has degraded the health and morals of large numbers of the people, and there is every reason for expecting a similar result where it is permitted in Canada. Overcrowded districts always produce numerous cases of infectious diseases, as well as of consumption and other disorders arising from general debility. Sir John Simon, the father of sanitary science in England, has said: "To children who are born under its (overcrowding) curse, it must often be a very baptism of infamy."

It has been well said that "blessed is the man who can learn from the experience of others," and the proverb is as applicable to nations as it is to individuals. So far, Canada has failed to appreciate fully that the overcrowding in European cities has been a direct cause of physical, moral and social debility, and has not grasped and overcome the problem as it presents itself in our young cities. Health authorities must be given greater powers in the matter of condemning and, if necessary, ordering the destruction of houses that are not *homes*. Building regulations in Canadian cities are also notoriously inadequate, and such as do exist are rarely enforced.

First of all, Canada needs an aroused and educated public sentiment. This will, as a matter of course, demand the enactment and enforcement of legislation sufficient to stamp out overcrowding with all of its attendant evils, and go far toward making every Canadian house a *home*.

THE GARDEN CITY: ITS ORIGIN AND PURPOSE

THE "Garden City" movement comes to us from England. It had its origin as a practical protest against the disgraceful housing and living conditions which prevailed among the working class inhabitants of the populous industrial centres of that nation. Advocates of better housing, etc., conceived the idea of constructing, on agricultural land, a model or garden city, in which due care should be taken for the proper utilization of land, for housing regulations, for the provision of public utilities, transportation and recreation facilities, and, finally, for a just system of taxation. This idea led to actual experiment, the success of which clearly demonstrated the feasibility and economic soundness of such undertakings.

As a practical means of alleviating conditions due to lack of civic foresight in past years, the garden city or suburb is merely in its infancy. A model town is not an unattainable, Utopian ideal. It is only an example of the manner in which the growth of any urban municipality should be guided and controlled. The application of principles of common prudence alone is required to establish well-planned communities on an economic basis.

In Canada, we have somewhat less need for garden cities than has England, where it is very difficult to remedy past errors in existing cities. We have, however, a great need of wise planning for the future growth of our younger towns as well as of the older centres, many of which will experience rapid growth in coming years.

Students of municipal taxation will find the garden city and kindred movements of particular interest, for in such enterprises the question of taxation is prominent. Moreover, an excellent opportunity is afforded for the acquisition by the community of communally-created values Much of the difficulty connected with the determination of such values is eliminated by the fact that these cities are constructed on areas where the land and agricultural values coincide at the outset.

EARLY CHILDHOOD AND PROBLEMS IN TUBERCULOSIS

By William Charles White, M.D., Medical Director, Tuberculosis League, Pittsburgh, Pa.

THE question that first requires an answer in the discussion of prenatal and early childhood problems is this: What just reason is there for tuberculosis organizations inaugurating and conducting preventive work among babies and mothers?

We have at present voluntary organizations dealing with the betterment of almost every age and aspect of child life, as well as specially trained practitioners of medicine who deal with this period of life exclusively.

We have societies for the care of mothers during pregnancy; societies for the prevention of infant mortality; societies for the study of child welfare and child hygiene; societies for the control of child labour; all dealing with the health of the child and the potentiality which a healthy child carries as an investment for the state. Besides these voluntary groups, we are now entering upon the decade of state and municipal control for all health problems and so we have school physicians, school nurses, as well as separate bodies of municipal and state physicians, all of whom take a hand in the general welfare of the young human race, and it may be said, without fear of contradiction, that all the work of these various organizations is contributory in part to the prevention and cure of tuberculosis.

On the other hand, there stands out very clearly the universality of the tuberculosis problem. All lines of tuberculosis activity lead more or less directly back to the great truth that the implantations of tuberculosis are in childhood. The evidence of the post-mortem table, and the probably more delicate test of tuberculin, have shown us most conclusively that practically all our children in many of the crowded centres of population are at fourteen years of age the seat of tuberculous infection. In this childhood period we have all the varied forms of tuberculosis—of bones, glands, serous membranes, intestines, lungs, joints and meninges—to deal with, while in later life we have but the monotony of pulmonary tuberculosis, which becomes depressing in its multitudinousness, and which may be said to result in some way from some of these primary infections in earlier childhood.

On account of this universality of the infection tuberculosis organizations the world over have suddendly drawn toward the assumption of various forms of child welfare work, and it may be just as pertinently said that all the work done by tuberculosis organizations in this field contribute to the general health of the childhood period in just as great or to a greater degree than do the other organizations contribute to the prevention of tuberculosis.

These various activities are bound to continue and to widen in their scope, but the great weakness in the present plan is that there is no continuity in the paternalism with which the child's life is guarded. From the day of his birth the new human individual is seized upon by organizations or their agents—first, to prevent his infant mortality; then to see that he goes to the proper sort of school; then to prevent his labour; and besides these, he has a sprinkling of private practitioners and pediatrists in the various clinics and dispensaries of our large cities, and in it all there seems to be no dream of continuity. One paternalizing organization has no responsibility in seeing that the individual is passed on from the day of his birth until the day of his independence without the loss of a guiding hand, and so there has arisen, in this wonderful period of altruism, probably the greatest economic waste that the world has ever witnessed.

There has never been in the history of the world so comprehensive or efficient an organization for the improvement of any social condition as that which has been developed in every civilized country for the control and prevention of tuberculosis. Organizations for the public and voluntary control of this disease exist in practically every place in the civilized world, and all these organizations are centralized in state, national and international conference, and, besides this, as is pointed out above, all the lines of activity of this great organization have led steadily back, as the source of its problem, to the childhood period, so that nothing could be more fitting than that, in the interests of economy and of efficiency, there should congregate around the various tuberculosis organizations in the different communities all the other interests which have to do with the social betterment which can never be separated from health, so that all our labour may tend toward the highest point in human achievement—municipal autonomy, which will eventually find its expression in these matters in a unit equipment for a unit population.

As examples of the interlocking of the various problems which are presented to tuberculosis organizations, in common with all other organizations for child hygiene in an antenatal and post parturient period, there come up the health of fathers; the feeding, rest and health of mothers; the feeding of infants; the provision of pure milk supply; the matter of fresh air and rest; of clothing; housing conditions in home and school; associations in school and workshop; and of dentistry—all agents using practically the same implements for the attainment of their individual desires. To me there can be no argument offered to justify a multiplicity of agents to secure for any family the desired best family conditions which shall contribute equally well to the protection against all types of sickness. If our medical and nursing training schools are fulfilling their function, surely one graduate agent is competent to handle every side of the health problem; especially should this be true when the principles underlying all care and prevention are alike. And so, again, it seems to me that the congregation of our various forces around the present organized army for prevention of tuberculosis is not only the wisest course, but the most economical and most efficient course.

I cannot call attention to all the activities that have to do with the prenatal and early childhood problems. I feel, however, that there are certain features which probably do not suggest themselves as quickly as others, and it is these more neglected fields that I wish especially to emphasize.

Probably one of the most serious sources of infection to the child has lately been emphasized by the report of Doctor Hess from the ward of a large infant asylum in New York. In this institution the utmost care had been taken to control tuberculosis by segregation after giving to all children a tuberculin test and feeding them only on a pure pasteurized milk supply, containing no tubercle bacilli capable of producing tuberculosis, but, as so often happens, the greatest carelessness of all crept in—they failed to examine those who were to nurse and handle these so carefully protected children, and a consumptive nurse was admitted to the ward, and all the children whom she nursed became tuberculous.

One cannot read this history by Hess without being impressed with the seriousness of this, one of the great sources of the spread of tuberculosis in children. How careful we are in our private homes of our milk supply! How careful we are of the food of our children! How persistent we are in our efforts to prevent the contacts that may cause scarlet fever, smallpox, measles, whooping-cough, etc.—and yet how every day we accept nurses for our children and servants into our households who spend from weeks to years working for us, but spend their last two years, or less, of life dying in a hospital for the care of consumptives! We have seen so many such cases that it seems to me one of the most serious problems in tuberculosis work. Many conditions excuse it, the most important of which is that the housework and nursing have to be done and the labourers are few.

We talk so freely about the prevention of tuberculosis, and I know few of us have begun to do our duty in being sure that in our own homes and in the homes of our patients those who care for our children cannot infect them with tuberculosis, or with other chronic illnesses, and I do not think we will begin to reach the root of this problem until this and similar activities have gained greater force and until the examination of nurse-girls and nurses who are to be intrusted with the care of babies and children in our homes is a matter of routine. I am sure that many of those of feeble constitution caused by tuberculosis take on the work of nursing because it is a lighter task, and this may possibly be the explanation of our large mortality in the earlier years of life from this illness.

As another very serious feature in connection with early childhood in which the tuberculosis workers fight shoulder to shoulder with the various agencies dealing with child welfare and one of vital importance to all physicians dealing with childhood diseases is the question of pure milk supply. It cannot be said to be more the province of one group of workers than of another; it is equally true that pure milk supply is fundamental in the protection against typhoid; in the protection against sore throat; in the protection against infantile diarrhœal diseases; and probably in prevention of various forms of glandular and bone tuberculosis.

I can only say, in conclusion, on this point of contact it seems to me well for all of us to join our forces for the prevention of illness from the use of milk, and this I feel can be gained only by a carefully supervised, municipally controlled, pasteurized milk supply.

As you will see, every activity to which the tuberculosis work brings us also brings us in contact with other organizations. The great truth that appeals to me in every study of this sort that we enter upon is that we must have men guiding these various factors who can co-relate and bring together in some such way as we have attempted to outline above the many activities which have to do with the national health and welfare, but we have no right to be impatient, for, in the words of the preacher, there is a time for all things, "A time to every purpose under the heaven: a time to plant, and a time to pluck up that which is planted"; and the time for co-relation will come in its own good day.

MILITARY HYGIENE AND SANITATION

IT may appear absurd to speak of the conservation of human life, at a time when almost the entire continent of Europe is engaged in a relentless struggle. Modern military equipment and methods are expressly designed to waste human life and it appears inevitable that so long as nations continue to resort to arms for redress of real or fancied wrongs, so long will periodic ravages of the race recur. Nevertheless, much of the sacrifice to Mars that has blotted the record of the ages has been wholly unnecessary, and might have been avoided had military leaders exercised even the most rudimentary precautionary measures in respect to the care of troops in the field. During most of the great European wars, fever and cholera more than the bullet and the bayonet have thinned the ranks and swept away entire regiments. To check this loss, a pure waste from the point of view of military efficiency as well as from that of humanity, the new science of military sanitation has developed, not yet perfected by any means, but following and paralleling the progress of civil hygiene. Referring to the practice of this science, one may, therefore, speak of conservation of life even in the throes of war and leaders may endeavour to offset the cruel slaughter of the battlefield by minimizing the terrible drain of life due to the faults of camp and commissariat. The sanitary service of an army must reach the acme of efficiency and make all efforts to furnish soldiers with pure food and water, proper and sufficient clothing, and well located and drained encampments, especially when it is necessary to go into winter quarters.

Gen. Sir Horace L. Smith-Dorrien's introduction to the "Handbook of Military Sanitation" furnishes some striking information and data which illustrates just to what extent the toll of life exacted by warfare may be decreased. It is pointed out that, even as late in the history of modern warfare as the South African war, twenty times as many hospital patients were treated for two diseases alone, namely, enteric fever and dysentery, as for wounds, injuries, and accidents combined. During the Russian-Japanese struggle, however, the excellent management of the Japanese army marked a decided improvement in the care of troops in the field, and it is to be hoped that the same satisfactory conditions will characterize all succeeding struggles of nations.

If wars must occur, many human lives must be lost. While that part of the loss which is due to disease can be minimized, too much can not be expected in view of the restrictions upon sanitary methods necessarily imposed by campaign contingencies. Nevertheless, that government which fails to take every possible precaution and preventive measure is guilty of the wilful sacrifice of the nation's best blood.

REACHING THE HOME THROUGH THE FACTORY

A NUMBER of the manufacturing companies of the United States are employing district or visiting nurses. Usually they are under the direction of the local company physician, or plant manager, although in some cases the are under the City Visiting Nurse Association. Their duties are to visit homes of employees, especially where there is sickness and the family would be benefited by the assistance or instructions of a trained nurse; to render such aid as will add to the comfort and welfare of the families; and to instruct and direct in the care and feeding of infants. These nurses explain the proper preparation of all food and advise in the matter of economical purchasing; discourage anything and everything that does not tend to produce good morals, and teach the value and necessity of cleanliness and the benefits of fresh air and sunshine.

At one large steel plant for example, where the nurse employed is a member of the Visiting Nurse Association, there has been organized among the superintendents and foremen a "Good Fellow Club" to work in co-operation with the nurse. The members of the club contribute fifty cents per month (or any amount greater or smaller which they may care to contribute) to a fund to be drawn upon immediately by the nurse for relieving such distress as requires instant attention, temporarily, and until more permanent relief can be provided through the regular avenues involving the delay attendant upon regular procedure. The nurse uses this fund as she deems wise. It may be for the purchase of a bed, or necessary food and cooking utensils, or a special diet for a sick person, clothing for the children, etc.

During the summer this "Good Fellow Club" maintained a small playground on some vacant lots in a congested neighbourhood, near the mill. A woman was in constant attendance, and the nurse made several visits a day. In this playground the little children could be watched and cared for, and it was the general opinion that many cases of illness among the children had been prevented.

SANITARY ENGINEERS ON HEALTH BOARDS

Building conditions, especially in the cities, have become so much a matter of sanitation and ventilation, and the health problems which confront the members of the local boards of health are so closely allied with the study of sanitary science, as to suggest that among the members of health boards a practical sanitary engineer be included. Naturally this appointment would be an honorary one, but, from the public standpoint, it would be of inestimable value to the municipality to secure the advice of practical men on the important questions which arise in the administration of its public health department.

In the city of Manila, P. I., all buildings must be rat-proof. All hollow construction is forbidden, except it be without openings through which rats might pass and of material through which they cannot make their way.

DANGER FROM COMMUNICABLE DISEASES IN WINTER MONTHS

WITH the approach of the coming autumn and winter months, a word to wise parents in regard to communicable diseases, if heeded, might prove of great value in preventing unnecessary loss of life and the spread of these preventable diseases. During the summer, when children spend their days in the open, the incidence of scarlet fever and diphtheria is much less than during the inclement months, when so many are brought together in the schools and in their own homes. The cold, damp weather lowers a child's resistance to such an extent that he is a prey to germs which ordinarily would be thrown off, and his close contact with his fellows makes him a source of danger to many others.

WATCH SORE THROAT

We urge the parent to watch closely the health of every child, and not at any cost to regard lightly a complaint of sore throat. Such a complaint should be immediately attended to by a physician and regarded and treated as diphtheria until proven otherwise. If this were universally done, there would be few or no deaths from this disease, and no lifelong regrets by parents who may have done their utmost in their own but ineffective way. Call a physician, have antitoxin administered early, and you will have little to fear. Pitiful scenes are witnessed in the admitting room of the isolation hospital when children, ill beyond human aid, are brought by their mothers, who will tell how they have stayed up night after night applying home remedies, but admitting that they had neglected to call a physician until the last minute. This is "mothers' love," but it does not cure diphtheria; in fact, it may in many instances be the direct cause of death. Remember that the early administration of antitoxin means life and that delay is dangerous.

RASH ALSO A SIGN

Moreover, do not conceal the occurrence of a rash, however trivial it may seem, for the sake of the patient himself, and of those who come in contact with him. Loss of hearing and irreparably damaged kidneys are quite as likely to follow a mild case of scarlet fever as a severe one, and who knows but that a brother or sister may contract a severe form of the disease for which there is absolutely no hope of recovery.

If every parent would heed these simple precautions the occurrence of communicable diseases would be greatly lessened and the death rate reduced to a minimum.

WAR AND THE EUGENIST

The economist, the political idealist, the moral enthusiast—leaders in all branches of thought, will regard the present war with doubt and misgiving. But none will deplore it so deeply as the eugenist. The man with visions of race improvement, the believer in the hereditary transmission of physical characteristics, must behold the destruction of the strong and hardy, the preservation of the weak and infirm. He is convinced that the physical improvement of the peoples of Europe will, as a result of the conflict, receive a century's setback. His fears are well grounded; his faith has the justification of history. Napoleon's fatal genius clouded all Europe with the gloom of war, wrecked commerce and industry, crushed political freedom. But worst of all, and most lasting, was the blow to the manhood of France. That was reparable only through the course of centuries.

The devastation of humanity is still the most terrible exaction of warfare. Progress in civilization, in political, economic and personal freedom is dearly bought, if it be attained only at the price of physical deterioration.

RECOMMENDATIONS OF DOMINION PUBLIC HEALTH CONFERENCE

AT a conference of Dominion and Provincial health officers, held in October, 1910, at the invitation of and in conjunction with the Public Health Committee of the Commission of Conservation, the following reports and recommendations were submitted by the various committees of the Conference:—

COMMITTEE ON CENTRAL COUNCIL AND NATIONAL LABORATORY.

The report and recommendations of this committee were as follows:

1. That, in its opinion, the needs of Canada demand that a permanent national council of health be established, to be composed of—

    (a) An officer representing each Branch of a Federal Department engaged in Public Health Work.

    (b) A representative from the Public Health Service of each Province or Territory.

2. Such council shall hold one annual meeting at Ottawa and such other meetings at Ottawa, or elsewhere, as may be deemed expedient, at the call of the Commission of Conservation. Additional meetings may also be called through the Commission of Conservation at the request of the Ministers administering public health of any three Provinces or Territories.

3. Such Council shall—

    (a) advise regarding the harmonizing of existing Public Health legislation in Federal or Provincial Statutes;

    (b) advise as to passing of new legislation or regulations in the interest of Public Health, whether Federal or Provincial;

    (c) advise as to the nature of work best administered by Federal, Provincial and Municipal Health authorities;

    (d) advise as to the work to be conducted by such National Health Laboratory as may be established or that is being conducted in such laboratories as are now engaged in Public Health work;

    (e) advise Federal and Provincial Governments as to steps to be taken when epidemic disease threatens or appears within or without Canada;

(f) and generally to advise on such questions of Public Health as may from time to time arise;

4. That a National Public Health Laboratory be established—

(a) to investigate public health problems;

(b) to manufacture sera, vira, vaccines, toxines, anti-toxines and other analogous products;

(c) to supervise the manufacture and importation of all sera, vira, vaccines, toxines, anti-toxines and analogous products offered for sale in Canada, whether designed for use in the detection, prevention, treatment or cure of diseases of men or animals or obtained therefrom;

(d) to investigate through its technical officers questions relating to—

1. the pollution of streams;
2. the preparation, preservation, inspection and sale of foods and drinks;
3. the housing conditions as regards lighting, ventilation, heating, etc., of public buildings, schools, manufacturing plants, residences, tenements, etc.;
4. research work and the investigation of any other special matters which, from time to time may arise affecting Public Health.

5. That the Commission of Conservation be requested to send an officer to study and report upon the work and expenses of such laboratories in the United States, upon the methods of distribution and sale of the various products, and the initial cost of establishing such a laboratory.

(Sgd.) F. Momtizambert, M.D.,
Convener.

Canadian Public Health Laboratories

For the maintenance of efficiency in and with the object of coordinating the several branches of the Government service which relate to the health of the people, it is necessary that the officers of the Dominion Government be kept up to the high standard set by other countries, particularly Great Britain, the United States and Germany, where, by the establishment of governmental laboratories, opportunity is afforded for the officials engaged in public health work in these countries to keep abreast of scientific, experimental and research work by training and employment therein from time to time.

At the present time, the Dominion Government has several laboratories established in connection with different branches of departmental work, notably that of the Department of Agriculture, under the direction of the Veterinary Director General, where experimental and research work relating to diseases in animals has efficiently been carried on for some years to the material benefit of the farmers and owners of live stock of all kinds. From this laboratory there has been sent out, either free of charge, or at a nominal price, biological preparations of different kinds for the prevention and treatment of diseases in animals.

In nearly all the provinces, the Provincial Governments have well equipped laboratories (chemical and biological) under the direction of the health authorities for the benefit of the public; but their use is restricted to the examination of water, sewage, and pathological specimens relating to communicable diseases.

There are no laboratories in Canada such as are suggested in the first paragraph of this memorandum; and information given to the public and the medical profession is derived from foreign sources, *i.e.*, from laboratories maintained for this special purpose by national governments or by private funds. This is much to be regretted as there are conditions existing in Canada which can only be intelligently studied and the facts deduced, properly applied by and through the medium of a national laboratory.

In the case of some of what may be termed the newer communicable diseases to be found on this continent, our only source of information and our only authority to which we can turn for guidance and direction is to the laboratories of the Public Health and Marine Hospital Service at Washington.

We have not in Canada anything even approaching the experimental and research laboratories maintained by the city of New York; and at the present time, for the treatment of rabies in the human being, we have to look to the laboratories at Washington and New York for the Pasteur treatment, while in the case of this disease in animals, provision is made in the laboratories of the Department of Agriculture in Ottawa.

Again, nothing is being done in the Dominion to study the great and important question of cancer, of which 2,500 of our people die annually. This subject alone is worthy of consideration as an important factor in deciding upon their establishment.

In establishing public health laboratories for experimental, research, and manufacturing work, the Government would not in any way conflict with the work now carried on by some of the provinces, nor would it duplicate any work of the universities.

As to the production of antitoxins and other biological products, the methods to be adopted would be along similar lines to those relating to the laboratories of the Veterinary Branch of the Department of Agriculture which, for some years has manufactured and supplied, either free of charge or at actual cost, several biological products used in veterinary medicine.

The chief biological product in use in general medicine in all portions of the Dominion is diphtheria antitoxin, although many others are in use. Owing to their excessive cost, however, the demand is limited. One in particular, Antimeningitis Serum, it will be almost impossible shortly to obtain as the Rockefeller Institute has intimated that its manufacture in its laboratories will be soon discontinued. Further, the preparation of vaccines to combat diseases due to gonococci, streptococci, staphylococci, colon bacilli, typhoid bacilli, and other bacteria, is daily becoming more urgent, if the modern methods of medical practice are to continue in this country.

The cost of production of diphtheria antitoxin as reported by both the State Boards of Health of the State of New York and of the city of New York, is six cents per 1,000 units, while the retail price, as quoted by the leading American producers, is $2.00 per 1,000 units; the retail price of 5,000 units, which is a usual dose, being $7.50, as against the actual cost of 30 cents; while the syringe container costs the above mentioned Boards of Health 18 cents each, a cost of 48 cents per dose, as against $7.50 , that now paid by the public.

If this antitoxin could be manufactured in a Public Health Laboratory and supplied at cost to the physician, its use would be greatly extended for immunizing purposes, thereby lessening the incident of diphtheria and reducing the death rate from the disease.

Again, in the case of tetanus antitoxin, the present charge for each treatment is not less than $25.00, while the New York State Health Department manufactures it at a cost of 60 cents per treatment.

As a fair guide to what might be expected of the laboratories of the Dominion of Canada, the output of that of New York State may be taken as a fair criterion, viz: 36 million units of diphtheria antitoxin —to produce which it requires at least twelve horses, in addition to which there are some 200 guinea pigs, with rabbits, etc.

The requirements for the establishment of such laboratories as outlined, would be:—

Capital Account:

(a) A suitable building, one unit, at a cost of.....	$ 10,000	
(b) Fitting and apparatus.....................	5,000	Capital
Other supplies and animals................	3,000	$18,000

Annual Charges:

(c) Staff:—One director............	$2,000 – $3,000	
2 skilled bacteriologists (with medical education).............	1,500 – 1,800	Annual cost approximately $10,000 to $12,000
1 skilled physiological chemist....	1,500 – 1,800	
2 laboratory helpers, 1 stableman, and helper.................	2,000 – 2,500	

Taking the output of the two laboratories mentioned as a fair average of what diphtheria antitoxin might be sent out from a Dominion Public Health laboratory, we find that 6,000 doses of 5,000 units each were distributed by both the State and City Departments of Health, which, at the retail prices previously quoted, represents $45,000; while the actual cost, including containers, would be in the neighbourhood of $3,000.

The great benefit accruing to the people generally by reason of the research and experimental work is of such a character that it is impossible to estimate its worth in dollars and cents.

In regard to the various biological products sold but not manufactured in Canada, there is no Government control or inspection—no guarantee as to their efficiency, such as is exacted by the Federal Government of the United States, which controls and licenses the various laboratories located in that country which manufacture for human use. The paper presented by Dr. Higgins before the Conference of Health Officers recently held in Ottawa shows the great discrepancies existing as between the stated value of the several products used for veterinary treatment over which the United States Government exercises no control and that actually found to exist. We have no guarantee that similar discrepancies do not exist in respect to the biological products as sold in

Canada for use in human beings—a contingency which would not occur if the Canadian Public Health Laboratories were established as recommended.

TABLE SHOWING THE VARIABILITY OF ANTI-TETANIC SERUM (*veterinary*) AS PUBLISHED IN BULLETIN 421 OF THE UNITED STATES BUREAU OF ANIMAL INDUSTRY

	Manufacturer	Exchange date	Laboratory number	Labeled to contain	Contain
1	H. K. Mulford	May 1, 1910	2,960	500,000	615
2	Parke, Davis & Co.	May 24, 1910	....	not stated	1,250
3	H. K. Mulford	May 15, 1910	2,960	500,000	607
4	Pasteur Laboratories, Paris, France	....	....	....	1,000
5	Lederle Antitoxin Laboratories	June 10, 1910	19A	1,500	1,601
6	Parke Davis & Co.	Dec. 8, 1910	....	....	1,250
7	" "	" "	....	....	1,250
8	" "	Jan. 14, 1911	....	....	1,000
9	H. K. Mulford Co.	May 15, 1910	2,971	500,000	472
10	Pasteur Laboratories, Paris, France	....	....	....	1,110
11	" "	....	....	....	1,530
12	H. K. Mulford Co.	May 1, 1910	2,960	500,000	607
13	Lederle Antitoxin Laboratories	June 21, 1910	19A	1,500	1,972
14	Pasteur Laboratories, Paris, France	....	....	....	1,530

COMMITTEE ON TUBERCULOSIS

1. That the Federal authorities give substantial assistance both for supporting and carrying on such work already in existence and to encourage the establishment of new sanatoria and hospitals for consumptives.

2. That, with a view to encouraging and assisting tuberculized persons and their families, the Commission of Conservation take early steps to secure from the different Governments areas of Crown lands in localities recognized as being climatically favourable for the cure of tuberculosis, such areas to be set apart for colonies of tuberculized persons and their families for settlement under such conditions as may be found practicable.

3. It is suggested that, in the event of any system of workingmen's insurance being established by the Federal Government, provision be

made whereby tuberculized persons, if recipients of sick benefits, be required to take advantage of such sanatorium treatment as circumstances may permit of.

(Sgd.) C. J. FAGAN,
Convener of Tuberculosis Committee.

AIR SUPPLY FOR SLEEPING ROOMS

ROOM overcrowding is a very different thing from land overcrowding; but here, too, there are difficulties in the way of establishing arbitrary standards. What constitutes room overcrowding? The only standard that has been adopted heretofore on this continent has been the standard of a minimum amount of cubic air space. In most cities this standard has been 400 cubic feet of air for each adult, and 200 cubic feet of air for each child under twelve years of age occupying a room. Such a standard is valueless. To illustrate: A bed-room seven feet wide, ten feet long and nine feet high contains 630 cubic feet of air. Let us assume that it is well lighted and ventilated, by a large window opening directly on a broad street, and that the room communicates with other rooms with sufficient windows and thorough ventilation. No better bedroom could be devised from the point of view of health and sanitation, and yet, under such a requirement of law a man and his wife, or two boys fourteen years of age, could not legally sleep in this room, because there would not be 400 cubic feet of air for each occupant.

If 400 cubic feet of air is not the proper minimum, what is the proper minimum? Shall it be 600 or 800 or 200 cubic feet? Study of the problems involved leads to the conclusion that not only the question of cubic air space must be considered, but that far more importance must be attached to the kind of air supplied to the room and the *frequency of its renewal.* It would be much better to permit a family to sleep in a room containing but 400 cubic feet of air of excellent quality and frequently renewed, than to permit them to sleep in a room, containing four times the air space, where the renewal was not so frequent nor the source of original supply so satisfactory. It makes a very great difference whether the air comes from a broad street or from a narrow alley, from a large backyard or from a narrow airshaft. These considerations are generally lost sight of in the discussion of this problem. This question, like that of land overcrowding, cannot be solved by establishing any arbitrary standard.—*Lawrence Veiller.*

BRITISH COLUMBIA SANITARY INSPECTION

That Canada's western province is keeping to the fore in the matter of sanitary measures is evidenced by the fact that the Provincial Health Department has despatched inspectors to the new settlements, mining, logging and construction camps, where there is a lack of sanitary conveniences. Too often very little care is given to cleanliness and health precautions in these temporary establishments, and it is with a view to a thorough investigation of their condition that the present inspection is being made. Reports so far received show very satisfactory results of the government's watchfulness.

INDUSTRIAL ACCIDENTS AND THEIR CAUSES

SAFETY appliances without number and accidents increasing in frequency at an alarming rate are developments of the present day industrial conditions.

The increasing danger to life and limb involved in the pursuit of industrial occupations has become so great as to render imperative some means of educating employees respecting the risks to which they are exposed and the measures which they may take, and which to a large extent are in their own hands, to minimize the dangers of their occupations.

The toll of human life exacted in factories, mills, and workshops, on the farm and in the lumber camps of Canada has reached such proportions as to compel our provincial governments to consider the question. They are endeavouring to meet one phase of the situation by the introduction of workmen's compensation acts, which attempt to place the responsibility for accidents.

Investigation into the causes of many accidents has proven conclusively that a great percentage of them can be avoided by the adoption of preventive means and by education along preventive lines.

The principal causes of accidents may be summarized as follows: Absence of safeguards, defective machinery and lighting, unsafe structures, insufficient room, uncleanly conditions, over-zealousness, carelessness and ignorance.

For the majority of these causes the employer is, in great measure, responsible. Far too many employers are interested in their plants only for the amount of net revenue derived therefrom under present working conditions and, consequently, they will not invest the necessary capital to equip the plant with safety devices and sufficient lighting, or provide means for keeping the premises in a cleanly condition. Although the provincial factory acts require such equipment, and although factory inspectors may suggest and order improvements, unless the employer can be made to realize that the changes are suggested in his interests, very little practical result can be accomplished.

In the case of accidents, however, the workman is perhaps his own worst enemy. As investigation has consistently shown, the employee is responsible for his own injuries or for injury to others to a far greater extent than many suppose. It is not suggested that this is deliberate; on the contrary, it is due to carelessness in leaving dangerous exposures, in taking chances not required for the fulfilment of duty, and to neglect of ordinary precautions in the pursuit of occupations. Moreover, many personal injuries are caused by over-zealous employees, in placing personal safety secondary to increase of production.

Education along safety lines is the only method of overcoming this distressing condition. In this educational work the co-operation of employees must be secured and safety committees organized. Fellow-employees can do a great deal to influence workmen to be more careful, but the initiative in the movement must come from the employer. A word from the employer to the effect that he values safety above extraordinary output would do much to reduce the number of personal accidents, and when an employer shows that he is interested in the personal security and safety of his employees he has gone a long way toward winning their confidence and respect.

SAFETY IN ELECTRICAL INDUSTRIES

ELECTRIC light and power companies are coming to the fore with other large manufacturing concerns in advocacy of the new and broad principle of "Safety First" among employees. The National Electric Light Association, one of the largest organizations of electrical companies, including practically every company of importance in the United States and Canada, is especially active in this humane propaganda. A special "Safety First" pamphlet, published by a committee of the association, gives minute details of organization measures and of rules for the guidance of employees in the electrical industry by means of which they may render their employment less hazardous.

Some of the members of the association have already put into effect measures affording greater protection to and seeking the co-operation of their employees in safety work, and results are already apparent.

The suggested code of rules in the "Safety First" campaign is as follows:—

Don't take a chance when handling electrical circuits and apparatus·

Be sure you are right before you proceed with your work.

If you are in doubt about the proper performance of any work which you are to do, don't take a chance.

Consider all electrical circuits and apparatus alive until you have assured yourself that they are dead.

Persons unfamiliar with electrical circuits or apparatus who have to work directly or indirectly for the service company in proximity of same must be warned by the service company's representative in charge of the work of the dangers to which they are exposed.

Any person whose duty does not require the handling of electrical circuits and apparatus must not come within proximity of or tamper with such electrical circuits or apparatus.

No person should be permitted to handle electrical circuits or apparatus until he has been instructed therein.

Use the safety devices provided but do not rely entirely upon them. Safety devices may get out of order or become ineffective.

Remember personal caution is the greatest safeguard after all.

PERSONAL SAFETY.—Men engaged in the handling of electrical circuits and apparatus should cultivate the habit of being cautious and should wear clothing suitable for the work in which they are engaged. Especially should they avoid using finger rings, chains, loose clothing and, as far as possible, any metal parts in their wearing apparel.

EYE PROTECTORS.—On work where the eyes may be subject to an injury from flying particles, men should wear suitable eye protectors or safety goggles.

On work where the eyes are subject to injury from an electric arc, the eye should be protected by eye protectors or safety goggles with deep violet coloured lenses and with frames preferably made of non-metallic and non-inflammable material.

SAFETY BELTS.—Safety belts should always be worn by men working on overhead lines.

INSULATING SHIELDS OR COVERS.—When men are working in the immediate proximity of live circuits or parts with which they may inadvertently come in contact, they should first cover these live circuits or parts with a suitable rubber shield or other guard.

MANHOLES.—If the cover is removed from a manhole, the opening should first be tested as to the presence of gas and must then be properly guarded by a railing and danger sign or red flag. An additional man stationed at the opening is always advisable.

OVERHEAD STRUCTURES.—Before climbing a pole, scaffold or other overhead structure, the employe should first make sure that such pole, scaffold or other overhead structure is safe.

TOOLS.—The handles or all hand tools should be covered with rubber tape or other suitable insulation to prevent slipping and to reduce the opportunity for short circuits.

Such tools should be periodically inspected as to their suitability for work.

RESUSCITATION.—In cases of unconsciousness resulting from electric shock or asphyxiation, the prone pressure method recommended by the commission on resuscitation should be used, and all men handling electrical circuits and apparatus should thoroughly post themselves in regard to this method.

At a recent meeting of the Tramways Association of Great Britain, a suggestion was made regarding the introduction of rubber or some other silent material for street car tires, with the object of eliminating noise and vibration.

A public institute for the manufacture of vaccine and the teaching of sero-therapeutics has been established in Quito, Equador. Fifty thousand dollars has been appropriated for two years, with provision for necessary upkeep thereafter.

The corporation of Leeds, England, in making an appropriation for public band concerts, also included the purchase price of 500 folding seats. These are rented at two cents each during the band performance, and while the seats are a great convenience, the small charge pays for the handling of the chairs.

In the annual report of the sanitary inspection division of the Winnipeg Board of Health appears the following: "The great majority of our citizens are supporting us in our efforts, thus showing that the educational work of the last few years carried on by means of fly films, lectures, talks in the schools, and the press has had good effect."

The importance of the registration of sickness, in connection with the reports of vital statistics, may be summarized in the words of Dr. Lyon Playfair: "The record of deaths only registers, as it were, the wrecks which strew the shore, but it gives no account of the vessels which were tossed in the billows of sickness, strained and maimed, as they often are by the effects of recurrent storms. Registration of sickness would tell us of the recurrent storms and enable us to trim our vessels to meet them."